

CLAIMS:

1. A vending machine comprising:
 - a cabinet having a front wall fitted with a dispensing opening;
 - a plurality of conveyer racks, parallelly disposed within the cabinet, each
 - 5 for storing and conveying a plurality of boxes; each conveyer rack extending between a rear end adjacent a rear wall of the cabinet and a front end facing said front wall; and
 - an elevator assembly vertically displaceable along a path extending within the cabinet between the front ends of the conveyer racks and the front wall and
 - 10 being displaceable between a plurality of collecting stations adjacent each said front end and a vending station adjoining the dispensing opening.
2. A vending machine according to claim 1, wherein the conveyer racks are fitted with a box-displacing arrangement for displacing boxes in direction from the rear end toward the front end thereof.
- 15 3. A vending machine according to claim 2, wherein the box-displacing arrangement is a plurality of free-rolling members disposed along the conveyer rack and where the conveyer rack is inclined to facilitate gravitational displacement of the boxes towards the front end of the conveyer rack.
4. A vending machine according to claim 3, wherein the free rollers are a
- 20 plurality of parallelly extending roller members, their axis transversing the conveyer rack at a right angle.
5. A vending machine according to claim 1, wherein the conveyer racks are accessed for loading through a loading door at a rear portion of the cabinet.
6. A vending machine according to claim 1, wherein the boxes are
- 25 displaceable over the conveyer racks by gravity force only.
7. A vending machine according to claim 1, wherein the conveyer racks are fitted with a displacement mechanism for displacing the boxes in direction from the rear end towards to the front end thereof.

8. A vending machine according to claim 7, wherein the conveyer racks extend substantially horizontally and wherein a motor is provided for displacing boxes in direction from the rear end towards the front end of each conveyer.

9. A vending machine according to claim 8, wherein each rack is fitted with a displacing motor.

10. A vending machine according to claim 8, wherein the conveyer racks are fitted with a conveyor belt engagable with a displacement motor.

11. A vending machine according to claim 1, wherein one or more of the conveyer racks are fitted with lateral support members to prevent lateral displacement of the boxes over the rack.

12. A vending machine according to claim 11, wherein the distance between opposite support members is adjustable for receiving boxes of different sizes.

13. A vending machine according to claim 12, wherein the support members are fitted with extension rods fixedly displaceable over support rails of the rack, whereby a respective support member may be fixedly relocated to thereby set the distance between the opposite support members.

14. A vending machine according to claim 13, wherein the support members are fitted with extension rods slidably received within openings formed in corresponding posts extending from support rails of the rack and wherein the extension rods are fixedly displaceable, whereby a respective support member may be fixedly relocated to thereby set the distance between the opposite support members.

15. A vending machine according to claim 1, wherein each conveyer rack is fitted at its front end with a toggle assembly to control displacement of a duty box from the conveyer rack.

16. A vending machine according to claim 15, wherein the toggle assembly is designed for releasing the duty box and simultaneously arresting the next in line box.

17. A vending machine according to claim 15, wherein the toggle assembly is activated by an activating member associated with the elevator.

18. A vending machine according to claim 1, wherein the elevator is fitted with an elevator conveyer rack for displacing a box between a rear end and a front end thereof.

19. A vending machine according to claim 18, wherein the elevator conveyer
5 rack is activated by a motor.

20. A vending machine according to claim 15, wherein the elevator conveyer rack is fitted for traveling in a forward direction and in a reverse direction.

21. A vending machine according to claim 18, wherein the elevator conveyer rack comprises a member for activating a toggle assembly associated with each
10 conveyer rack, to control displacement of a duty box from the conveyer rack.

22. A vending machine according to claim 21, wherein the elevator conveyer rack is fitted for traveling in an opposite, reverse direction, to allow for the member to activate the toggle assembly in two operative sequences, one to facilitate transfer of a duty box from the conveyer rack to the elevator and arrest the next box at a
15 standby location over the conveyer rack; and a second to facilitate displacing of said next box from said standby location to a duty box location at the front end of the conveyer rack.

23. A vending machine according to claim 22, wherein the toggle assembly is fitted with a biasing spring arrangement for biasing a stopper arm of the toggle
20 assembly into a position for arresting a duty box adjacent a front end of a conveyor.

24. A vending machine according to claim 22, wherein the elevator conveyer rack is fitted with two members for activating the toggle assembly, one displacing a front stopper member of the toggle assembly in a direction to disengage from a duty box and the other for displacing the front stopper in the direction to engage
25 with a duty box adjacent a front end of the conveyor rack.

25. A vending machine according to claim 1, wherein the dispensing opening is openable only when the elevator extends opposite said dispensing opening.

26. A vending machine according to claim 25, wherein the dispensing opening is openable only when the elevator is loaded with a box.

27. A vending machine according to claim 1, wherein the dispensing opening is located at a height corresponding with the height of car boot.

28. A vending machine according to claim 1, wherein the dispensing opening is positioned at a height facilitating removal of a box while exerting minimal effort
5 by a consumer.

29. A vending machine according to claim 1, wherein the dispensing opening enables withdrawal of a box by grabbing it at gripping openings formed at side walls of the box.

30. A vending machine according to claim 1, wherein the dispensing opening
10 enables withdrawal of a box by grabbing it at a carrying handle formed at a top wall of the box.

31. A vending machine according to claim 1, further comprising a control unit comprising a processor and a plurality of sensors within the cabinet for generating control signals responsive of functional parameters of the machine and quantity of
15 boxes within the cabinet.

32. A vending machine according to claim 31, further comprising a user interface comprising a product selection module and a paying module.

33. A vending machine according to claim 32, wherein the control unit communicates with a remote control center.

20 34. A vending machine according to claim 34, wherein communication with the remote control center is facilitated by a wireless communication system.